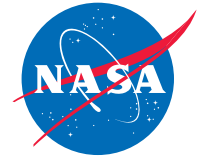




HDF-EOS Product Format Standard



Highlights

- ▶ HDF was developed by the National Center for Supercomputing Applications (NCSA) as a platform-independent format for simulation results.
- ▶ NASA selected HDF as the native product format for EOSDIS Standard Products.
- ▶ An extensive library of routines for analysis and display has been developed around HDF.
- ▶ Extensions to the format were required to enable it to effectively handle geolocated data.
- ▶ The extended model, HDF-EOS, permits full exploitation of the EOS Data Model and enables users to subset data via space or time.



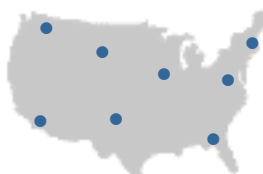
NASA has selected the Hierarchical Data Format (HDF) as the format of choice for standard product distribution for use in the Earth Observing System (EOS) Data and Information System (EOSDIS). HDF was developed by the National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana-Champaign to provide a portable storage mechanism for supercomputer simulation results. It provides a robust library of analysis and visualization routines.

HDF features include platform independence; user extensibility; and embedded metadata for units, labels, and other descriptors. HDF files consist of a directory and a collection of data objects. Every data object has a directory entry, which contains a pointer to the data object location, and information defining the datatype (examples include raster images, multi-dimensional arrays, and text blocks).

In its original form, HDF does not completely meet the needs of today's and tomorrow's Earth science data. To bridge the gap between the needs of EOS data products and the capabilities of HDF, three new EOS-specific datatypes – *point*, *swath*, and *grid* – have been defined within the HDF framework. The extended format is called HDF-EOS. This data format is HDF extended to accommodate ECS datatypes and metadata. HDF-EOS adds the following three geolocation data types to allow the file contents to be queried by Earth coordinates and time:

- The *Point* interface is designed to support data that has associated geolocation information but is not organized in any well defined spatial or temporal way.
- The *Swath* interface is tailored to support time-ordered data such as satellite swaths (which consist of a time-ordered series of scanlines), or profilers (which consist of a time-ordered series of profiles).
- The *Grid* interface is designed to support data that has been stored in a rectilinear array based on a well defined and explicitly supported projection.

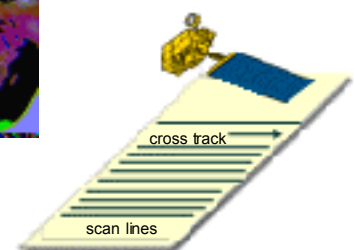
For more information on these structures, please refer to the *HDF-EOS Users Guide for the ECS Project, Volumes 1 and 2*. These documents can be found on the *ECS Data Handling System (EDHS) Webpage*: <http://edhs1.gsfc.nasa.gov/>.



Point



Grid



Swath